# BINDING FOR SNOWBOARD

## BACKGROUND OF THE INVENTION

### 1. Field of the invention

The present invention relates to a binding for a snowboard and, in particular, to a binding for a snowboard including a boot-fixing band the hardness of which can be adjusted.

### 2. Description of the Related Art

Conventionally, a binding for a snowboard is already known (JP-A-11-226171).

Fig. 5 is a perspective view of the above-cited binding for a snowboard. Reference character 1 designates a base plate to be fixed to a snowboard main body (not shown), 2 a center plate to be fixed to a snowboard or the like, 3 a high back connected to the base plate 1 so as to be contacted with the rear surface of a boot, 4 an adjuster for adjusting the forward-bent posture of the high back 3 with respect to the base plate 1, 5 a boot ankle portion fixing band with one end thereof connected to one side of the base plate 1, 6 a band fastening buckle mounted on the other end of the band 5, 7 a fastening belt with the base portion thereof fixed to the other end of the base plate 1 so that it can be inserted into the band fastening buckle 6, 8 a boot tiptoe portion fixing band disposed on the base plate 1 for fastening the tiptoe of the boot, and 9 a band fastening buckle.

In the above-structured conventional binding for a snowboard, when a boot is mounted onto the base plate 1, after the boot ankle portion fixing band 5 and fastening belt 7 are separated from each other, the boot is placed on the base plate 1 from above, the belt 7 is inserted into the buckle 6, and the buckle 6 is fastened to thereby fix the top side of the boot to the base plate 1. The boot tiptoe portion can be fixed similarly.

However, in the above-mentioned conventional binding for a snowboard, it is difficult for a user to accurately grip the using feeling (hard or soft feeling) of the binding in a shop. And, before actual use of the binding, the user cannot understand the hardness of the binding to his or her taste; and, unless the user experiences the snowboard a certain degree, many parts of the binding are difficult for the user to understand. Since the price of the binding is not inexpensive, in case where the user purchases a binding not to user's taste once, the user must use the binding patiently for the time being. Also, in some cases, bindings of different hardness may be preferably used according to snowboarding styles; however, it is difficult to satisfy this requirement using one binding.

## SUMMARY OF THE INVENTION

It is an object of the present invention to provide a binding for a snowboard which can adjust it hardness.

In attaining the above object, according to the present invention, there is provided a binding for a snowboard having: a base plate; a boot fixing band including a belt portion and a pad portion, the belt portion being mounted on one side of the base plate with one end thereof; a hardness adjusting plate mounted on the boot fixing band; a buckle connected to the hardness adjusting plate on the other end side of the boot fixing band; and a belt having one end mounted on the other side of the base plate, and the other end engaged with the buckle.

The hardness adjusting plate may be removably mounted on the boot fixing band.

The hardness adjusting plate may be fixed on the boot fixing band.

The hardness adjusting plate may include a cut-away groove in the central portion thereof so as to extend in the longitudinal direction thereof.

The binding for a snowboard may further comprise: an auxiliary elastic plate removably mounted in the cut-away groove.

The belt portion may be adjustable in length.

There is provided a binding for a snowboard having: a base plate; a boot fixing band; a hardness adjusting plate fixed on the boot fixing band; a belt interposed between one end of the hardness adjusting plate and one side of the base plate; a buckle connected to the hardness adjusting plate on the other

end side of the boot fixing band, the other end side of the boot fixing band being free from the belt; and a belt having one end mounted on the other side of the base plate, and the other end engaged with the buckle.

The hardness adjusting plate may be a band-shaped elastic plate.

The hardness adjusting plate may comprise a plurality of members being different from each other in hardness.

## BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is an exploded perspective view of the main portions of a binding for a snowboard according to a first embodiment of the present invention;

Fig. 2 is an exploded perspective view of the main portions of a binding for a snowboard according to a second embodiment of the present invention;

Fig. 3 is an exploded perspective view of the main portions of a binding for a snowboard according to a third embodiment of the present invention;

Fig. 4 is an exploded perspective view of the main portions of a binding for a snowboard according to a fourth embodiment of the present invention; and,

Fig. 5 is a perspective view of a conventional binding for a snowboard.

## DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Now, description will be given below of embodiments of a binding for a snowboard according to the present invention with reference to the accompanying drawings. In the present invention, the same parts thereof as those used in the above conventional binding for a snowboard shown in Fig. 5 are given the same designations and thus the description thereof is omitted here.

According to the present invention, as shown in Fig. 1, a boot ankle portion fixing band 5 is composed of a belt portion 5a having one end to be mounted on a base plate 1, and a pad portion 5b; on the pad portion 5b, there is removably mounted a hardness adjusting belt-shaped elastic plate 11 which is made of nylon, polyester, elastomer, urethane rubber or the like and has, for example, a length of 20cm, a width of 5cm and a thickness of 2mm, while the hardness adjusting plate 11 includes a long and narrow cut-away groove 10 having, for example, a length 13cm and a width of 2cm formed in the central portion thereof; and, a band fastening buckle 6 is mounted on the portion of the hardness adjusting plate 11 that is situated on the other end side of the band 5. The hardness adjusting belt-shaped elastic plate 11 may be formed in combination with at least two of nylon, polyester, elastomer, urethane rubber or the like.

By the way, the cut-away groove 10 can be omitted. Reference characters 15 and 16 respectively designate a screw

and a nut which are used to connect together the pad portion 5b, hardness adjusting plate 11 and buckle 6 into an integral body.

Since the binding for a snowboard according to the present invention has the above-mentioned structure, when a force from the ankle of a player is applied to the band 5, the band-shaped elastic plate 11 is deformed according to the player's build, so that the hardness of the band 5 can be changed more than when the band 5 is used alone. Therefore, as the band-shaped elastic plate 11, there may be prepared one or more band-shaped elastic plates differing in hardness and thus, in case where they are used selectively, the hardness of the band 5 can be adjusted in a wide range.

Also, the band-shaped elastic plate 11 can also be mounted on the boot tiptoe portion fixing band 8 in a similar manner.

Now, Fig. 2 shows a second embodiment of a binding for a snowboard. In the second embodiment, the belt portion 5a is not disposed in the band 5 but, on one end of the pad portion 5b, there is mounted a belt length adjusting belt 12 which is used to fix the pad portion 5b to the other side of the base plate 1. In Fig. 2, reference characters 13 and 14 respectively designate a screw and a nut which are used to connect together the pad portion 5b, hardness adjusting plate 11 and belt 12 into an integral body.

Now, Fig. 3 shows a third embodiment of a binding for

a snowboard according to the present invention. In this embodiment, a hardness adjusting auxiliary elastic member 17 is mounted in and fixed to a cut-away groove 10 of the band-shaped elastic plate 11.

To attain this fixation, grooves 18 may be formed, for example, in the upper and lower edge end faces of the auxiliary elastic member 17 and the inner edge of the cut-away groove 10 may be inserted into the grooves 18.

Now, Fig. 4 shows a fourth embodiment of a binding for a snowboard according to the present invention. In this embodiment, the band-shaped elastic plate 11 and belt length adjusting belt 12 are formed as an integral body and they are fixed onto the boot ankle portion fixing band 5.

By the way, reference character 19 designates a projection formed in the inner edge of the cut-away groove 10 so as to secure the fixation of the auxiliary elastic member 17, and 20 stands for a plurality of tapped holes which are formed so as to connect the belt length adjusting belt 12 to the other end of the base plate 1.

Since a binding for a snowboard according to the present invention is structured in the above-mentioned manner, a user is able to adjust the hardness of the band, which is the portion to fasten the boot, in two or more stages even after the user purchased the binding for a snowboard. Therefore, the user can purchase the binding for a snowboard without irritating

the nerves and, even after purchase of the binding, the user can adjust the feeling of the binding according the user's taste and snowboarding styles. Because a difference in the hardness of the band portion occupies a large rate of the sensory hardness as a binding, there can be obtained a great advantage that a large effect can be expected.